



Developing And Implementing Multimedia Approach For Enhancing ICT Skills Of Student - Teachers At Secondary Level

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ABSTRACT

Information and Communication has opened a new door to stay connected outside classroom. With the help of ICT, Virtual Classroom, Video Conference, E - learning, Internet etc became possible. Teachers can use ICT to deliver their lessons more effectively by using different media like Audio, Video, Animation, Picture, etc. Now it became necessary that teachers should also be equipped with ICT Skills. This study investigates the effectiveness of ICT Skills/Multimedia strategies in enhancing computer science learning among higher secondary school. Multimedia strategies, encompassing planning, monitoring, and evaluating cognitive processes are increasingly recognized as powerful tools for fostering and deep understanding and academic success. The research employs quantitative analysis of post-test scores of control and experimental groups. Higher Secondary School students are exposed to multimedia interventions tailored to computer science learning tasks, with a focus on self-regulation, reflection, and goal-setting. Results indicate significant improvements in students' computer science knowledge, critical thinking skills, and self- efficacy following the implementation of multimedia strategies.

Keywords : Multimedia strategies, critical thinking and goal-setting.

INTRODUCTION

With the spread of ICT, there is a growing demand for it in teacher education. The National Policy on Education 1986, as modified I 1992, stressed upon employing educational technology to i) Online Resources, ii) Student Learning, iii) Digital Citizenship and iv) Professional Learning. Education is a socially oriented activity and it develops all kind of skills among person. In order to meet the growing demand for higher education, Information and Communication Technology (ICT) be explored in the for of technology enhanced programme.

MEANING AND DEFINITION OF ICT SKILLS/MULTIMEDIA LEARNING PACKAGE IN EDUCATION

Multimedia learning package is a teaching method that uses a combination of words, pictures, sounds, and other media to help students learn. It's a form of computer-aided instruction that can be used in many different ways, including in online courses, presentations, and videos.

Examples of multimedia learning package

- Watching a PowerPoint presentation
- Watching a prerecorded lecture
- Reading a textbook with illustrations
- Watching a video on YouTube
- Taking an online course
- Using a virtual library or museum

Here are some of the benefits of using Multimedia Learning Package in education:

Video: Prerecorded video or a series of videos can be used to explain complex concepts or demonstrate procedures and techniques.

Images and info-graphics: Images and info-graphics can be used to present data and information in a visually appealing and easy-to-understand manner.

Interactive media: Interactive elements, such as quizzes, simulations, and games, can be used to engage learners and provide them with a more immersive learning experience.

Audio: Audio recordings such as podcasts or voice notes can be used to provide learners with spoken instructions, feedback, or commentary on course materials.

Animations: Animations can be used to illustrate complex processes or systems, making them easier to understand and remember.

Social media: Social media can be used to facilitate collaboration and communication among learners and between learners and instructors. Most social platforms allow you to create groups where you can come together to discuss a common thread.

NEED OF THE STUDY

Educationists suggest that the curriculum should be framed according to the development of cognition and multimedia learning package of the students. The quantity and quality of children's multimedia learning knowledge and monitoring skills through systematic training may be feasible as well as desirable. In the realm of education, particularly in the field of computer science there exist a pressing need to enhance students learning experience and outcomes. Higher Secondary students often encounter challenges in comprehending complex computer science concepts, applying critical thinking skills, and effectively problem solving within the discipline. Multimedia learning package strategies offer a promising avenue for addressing these educational challenges. This research aims to provide valuable insights into the practical applications of multimedia learning package in the context of computer science education.

OBJECTIVES

1. To find the significant relationship between multimedia learning package awareness scale and post test scores of control group.
2. To find the significant relationship between multimedia learning package awareness scale and post test scores of experimental group.

HYPOTHESIS

1. There is no significant relationship between multimedia learning package awareness scale and post test scores of control group.
2. There is no significant relationship between multimedia learning package awareness scale and post test scores of experimental group.

REVIEW OF RELATED LITERATURE

Meera (2000) studied relative effectiveness among different modes of computer- based Instruction in relation to students' personality traits. Major objective of the study was to find out significant difference among the different modes of computer - based instruction viz. tutorial, drill & practice and simulation in realizing the instructional objectiveness in computer science for class XI. Quasi-experimental method as well as qualitative and quantitative approach was adopted for the study. Achievement test was used to assess effectiveness. Findings revealed that (1) different modes of computer based instruction, viz. drill, practice and simulation were more effective than conventional lecture method in realizing the instructional objectives in computer science for class XI. (2) Effectiveness of the conventional lecture method and the different modes of the computer-based instruction, viz. tutorial, drill and practice and simulation were not influenced by the learner's personality.

Beder (2001) designed flexible computer-based learning package available on CD- ROM to teach students about the social and political dimensions of environmental issues. It contained resource materials that can be used by the lecturer in a large theatre, including video clips, sound recordings and overhead projection slides. The major achievement of the study was that CD-ROM was highly successful and it was general enough to be transferable for use by other lecturers in other institutions who taught similar subject.

RESEARCH INSTRUMENTS

1. A Computer Science lesson on the topic 'Python Basics' using Multimedia Learning Package strategies was constructed and validated by the investigator and guide (2025).
2. Multimedia Learning Package scale - A scale was adopted for the study which has standardized by Bureau of Indian Standards (BIS), which is the National Standard body of India.

HYPOTHESIS : 1

There is no significant relationship between multimedia learning package awareness scale and post test scores of control group.

Table:1 Relationship between multimedia learning package awareness scale and post test scores of control group.

Multimedia Learning Package Vs Post-test scores	N	df	calculated Value	Remarks at lev
Control Group	14	13	0.68	S

(For df 13 the table value of 'r' is 0.35, S –Significant)

From Table 1, it is inferred that the calculated "r" value (0.68) is greater than the table value (0.35) for the degree of freedom 13 at a 0.05 level of significance. Therefore, the null hypothesis (Ho) is rejected. Hence it is concluded that there is a significant relationship between multimedia learning

package and post-test scores on achievement in Computer Science of control group students.

HYPOTHESIS : 2

To find the significant relationship between multimedia learning package awareness scale and post test scores of experimental group.

Table:2 Relationship between multimedia learning package awareness scale and post test scores of experimental group.

Multimedia Learning Package Vs Post-test scores	N	df	calculated Value	Remarks at lev
Experimental Group	14	13	0.95	S

(For df 13 the table value of 'r' is 0.35, S –Significant)

From Table 2, it is inferred that the calculated "r" value (0.95) is greater than the table value (0.35) for the degree of freedom 13 at a 0.05 level of significance. Therefore, the null hypothesis (Ho) is rejected. Hence it is concluded that there is a significant relationship between multimedia learning package and post-test scores on achievement in Computer Science of experimental group students.

MAJOR FINDINGS

1. The calculated "r" value (0.68) indicates that there exists a significant relationship between multimedia learning package in enhancing higher secondary school student's performance in computer science and post test scores of the control group.
2. The calculated "r" value (0.95) indicates that there exists a significant relationship between multimedia learning package in enhancing higher secondary school student's performance in computer science and post test scores of the experimental group.

CONCLUSION

Result shows that there exists significant relationship between the post test scores of the control group and experimental group. By comparing the multimedia learning package scores of control group and experimental group, it is observed that the control group scores are greater than the experimental group. This shows that though the control group students have more multimedia learning package level than the experimental group, it is evident that due to multimedia based teaching the experimental group has scored high in the post test when compared to control group. Hence, it is concluded that the improvement of the experimental group students in the achievement scores is only due to the effect of multimedia based teaching.

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